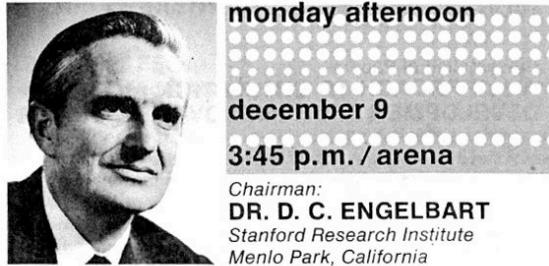


A moment in computer history
Tom Bickford, 2020



a research center for augmenting human intellect

December 9th, 1968. At the Association for Computing Machinery/Institute of Electrical and Electronics Engineers (ACM/IEEE) Fall Joint Computer Conference in San Francisco, a presentation by Douglas Engelbart. Engelbart was from the Augmentation Research Center at SRI (Stanford Research Institute). At the time SRI was still part of Stanford University, but has since become SRI International.

At the time of Dr. Engelbart's presentation, computing was still almost entirely conducted on mainframe and mini computers. The world of microcomputers had yet

to be unleashed. Almost all of the interface being done with computers was through a keyboard and a textual display screen.

The presentation was later dubbed "The Mother of All Demos". Why? Because it introduced the world to:

- The fundamental elements of modern personal computing with the introduction of the oN-Line System or NLS, shown here with Bill English in 1968.
- Windows (not Microsoft Windows, but the concept of a graphical user interface with different windows being able to be opened independently)
- Hypertext, yes, the beginnings of the internet. ARPANET didn't put out bids for the development of the Internet in the US until 1969
- Graphics, remember, it was a world of text at the time
- Efficient navigation and command input
- Video Conferencing, see YouTube to see this at work
- The computer mouse. While the trackball system dated back to 1946, it was kept as a military secret and never shared. Englebart and a coworker Bill English built the first mouse prototype. This was the first public demonstration of a computer mouse
- Word processing
- Dynamic file linking, this allowed programmers to reference code stored in file and included in a runtime program by linking the code to your code. We know this as DLL files or Dynamic Link Libraries today
- Revision Control. This is the time stamping of changes to files and code along with sensible version labelling. For instance I might be running Windows 10 Pro, Version 1903, OS build 18362.592. All of which tells us what we are using
- Real-time collaborative editing of files



So before December 9th only a few people at the research and development centers were working on these technologies, but almost overnight the world changed. Sometimes it's hard to calculate time scales and we have to consider what we are talking about. In geological scale, 100,000 years is pretty quick. In human years, a century is huge, and in computer years, usually 4 years is enough to change half of the technology out there. But in 1968, it did one of those jumps, a moment when things sort of cascade on their own to form whole new lines of thinking and inventing that didn't happen before.

Dr. Engelbart didn't go on to change the world, his 90 minute presentation did that. It sparked people throughout the computer world to consider and commercialize what he and the Augmentation Research Center at SRI had started in the 1960s.

Members of the ARC team left for work at Xerox's Palo Alto Research Center (PARC) and went on to invent the Xerox Alto, the first fully functional personal computer similar to the NLS terminal built by Engelbart, but smaller and refined. This eventually led to Steve Jobs and Steve Wozniak's work developing the Apple Computer.

While not necessarily well received during much of his career as being "out there", his presentation was later looked back by many as the Mother of All Demos. It led, in many ways, to almost everything we see in computers today. Well, maybe not the cell phone.

Sometimes folks become famous for one solitary invention, others for being a catalyst for monumental change.

You can watch some or all of the original presentation and demonstration if you go to YouTube and type in "1968 Mother of all Demos" or follow this link:

https://www.youtube.com/results?search_query=1968+mother+of+all+demos+

Here is a nice article about innovation pathways:

<https://zurb.com/blog/steve-jobs-and-xerox-the-truth-about-inno>